

## Abstract

[0098] The invention is directed to a method for determining the image quality of an optical imaging system and to the use of the method according to the invention for determining the influence of samples on the amplitude distribution and phase front distribution of the illumination light, of which the amplitude distribution is known in particular. The invention comprises the following steps: adjusting the subassemblies relative to one another in such a way that it is possible to project images of a sample on the detection device; recording a plurality of images of the sample from different reference planes near the focus plane; improving the image quality by means of image processing, particularly to reduce noise, to compensate for local variations in sensitivity of the detection device, and to center the intensity centroids respectively on a predetermined location in the images; computational linking of the spatially resolved image information, of adjustment values and system variables relating to the optical imaging system, and of information concerning the sample with the aim of determining characteristic numbers that are characteristic of the wavefront deformation caused by the imaging system; and outputting the characteristic numbers and associating them with the imaging system for describing the image quality.